Claim Amendments:

Please amend the claims as follows:

1. (Previously presented) A capacitance acceleration derivative detector system comprising:

a housing;

a first plate fixed within said housing;

a second plate fixed within said housing spaced apart from and in parallel relation to said first plate;

a flexure plate disposed between and in substantially parallel relation to said first and second plates, said flexure plate coupled to said housing along at least an edge, said flexure plate and said first plate defining a first distance and said flexure plate and said second plate defining a second distance,

wherein said first and said second distances vary in response to acceleration forces acting upon said flexure plate, and wherein said first plate and said flexure plate generate a first charge displacement capacitance signal, and said second plate and said flexure plate generate a second charge displacement capacitance signal;

a first transimpedance amplifier receiving said first charge displacement capacitance signal and generating a first scaled voltage signal therefrom; and

a second transimpedance amplifier receiving said second charge displacement capacitance signal and generating a second scaled voltage signal therefrom,

wherein an acceleration signal is generated from said first scaled voltage signal and said second scaled voltage signal.

2. (Original) The system of claim 1 further comprising a differential amplifier adjusting a gain of said first scaled voltage signal and said second scaled voltage signal and generating a voltage differential signal therefrom.

3. (Original) The system of claim 2 further comprising an analog-to-digital converter receiving said voltage differential signal and generating a digital voltage signal therefrom.

4. (Original) The system of claim 3 further comprising a time integrator integrating said digital voltage signal in response to initialization parameters and generating an integrated signal therefrom.

5. (Original) The system of claim 4 further comprising a linearizer receiving said integrated signal and generating therefrom a linearized acceleration signal.

6. (Original) The system of claim 5 wherein said linearizer comprises a linear lookup table.

7. (Currently amended) The system of claim ~~4~~ 5 further comprising an actuator activating a system component in response to a system control signal; and a processor receiving said linearized acceleration signal and generating said system control signal in response thereto.

8. (Original) The system of claim 7 wherein said system component comprises a thruster or an attitude control device.

9. (Previously presented) A method for operating a capacitance acceleration derivative detector system comprising:

accelerating a flexure plate, thereby causing a first distance between the flexure plate and a first fixed plate to change and thereby causing a second distance between the flexure plate and a second fixed plate to change;

generating a first variable capacitor signal;

generating a first scaled voltage signal in response to said first variable capacitor signal;

generating a second variable capacitor signal;

generating a second scaled voltage signal in response to said second variable capacitor signal; and

generating an acceleration signal in response to said first scaled voltage signal and said second scaled voltage signal.

10. (Original) The method of claim 9, wherein generating said acceleration signal further comprises gain adjusting said first scaled voltage signal and said second scaled voltage signal and generating a voltage differential signal therefrom.

11. (Original) The method of claim 10, wherein generating said acceleration signal further comprises generating a digital voltage signal from said voltage differential signal.

12. (Original) The method of claim 11, wherein generating said acceleration signal further comprises generating an integrated voltage signal in response to initialization parameters and integrating said digital voltage signal.

13. (Original) The method of claim 12, wherein generating said acceleration signal further comprises linearizing said integrated voltage signal and generating a linearized signal therefrom.

14. (Original) The method of claim 13, wherein generating said acceleration signal further comprises filtering said linearized signal and generating said acceleration signal therefrom.

15. (Original) The method of claim 14 further comprising activating an object control device in response to said acceleration signal.

16. (Previously presented) A system for controlling acceleration including an object adapted to accelerate comprising:

a platform;

a first accelerometer coupled to said platform and comprising a first shared capacitor sensor comprising a housing, a flexure plate, comprising a first side, a second side and a common edge, said edge coupled to a housing structure,

a first fixed plate coupled to said housing at a first distance from said first side of said flexure plate,

a second fixed plate coupled to said housing structure at a second distance from said second side of said flexure plate and arranged substantially parallel with said first fixed plate,

said flexure plate being flexible under acceleration forces wherein said first distance and said second distance vary as a function of said acceleration forces to generate a first charge displacement capacitance signal in response to change in said first distance and a second charge displacement capacitance signal in response to change in said second distance,

a first transimpedance amplifier adapted to receive said first charge displacement capacitance signal and generate a first scaled voltage signal in response thereto,

a second transimpedance amplifier adapted to receive said second charge displacement capacitance signal and generate a second scaled voltage signal in response thereto;

a differential amplifier adjusting a gain of said first scaled voltage signal and said second scaled voltage signal and generating a voltage differential signal therefrom;

an analog-to-digital converter receiving said voltage differential signal and generating a digital voltage signal therefrom;

a time integrator integrating said digital voltage signal in response to initialization parameters and generating an integrated signal therefrom;

a linearizer receiving said integrated signal and generating therefrom a linearized acceleration signal;

a processor coupled to said first accelerometer and adapted to receive said linearized acceleration signal and generate a system control signal in response thereto.

17. (Original) The system of claim 16 further comprising an object control device activating in response to said system control signal, said object control device comprising at least one of a thruster, an attitude control device, a missile steering nozzle, or a vane actuator.

18. (Original) The system of claim 16 further comprising a second accelerometer coupled to said platform orthogonal to said first accelerometer, said second accelerometer generating a second accelerometer signal in response to movement of the system, wherein said processor further generates said system control signal in response to said second accelerometer signal.

19. (Original) The system of claim 18 further comprising a third accelerometer, wherein said second and third accelerometers are arranged with said first accelerometer to receive cross axis thrust data, wherein said processor generates said system control signal in response to said cross axis thrust data.

20. (Original) The system of claim 19 further comprising a serial data bus receiving acceleration signals from said first, second and third accelerometers, said serial data bus exchanging information with said processor.